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Federally Funded Infrastructure Must Be Flood Ready

Incorporating future flood risk into projects would reduce losses, recovery costs

Overview

Flooding is the most common[1] and costly[2] natural disaster in the United States, causing more than $830 billion in estimated losses since 2000.[3] In addition to private property damage, deluges from hurricanes and other storms have washed out roads and bridges and flooded schools, hospitals, and utilities.

Much of this infrastructure is vulnerable to flooding because it's decades old and in poor condition, reflected by a failing grade by the American Society of Civil Engineers in its 2017 report card.[4] And as floods have become more frequent and intense, exposing more areas to a deluge, federal policies haven't evolved to address this growing threat. As Congress considers new investments in infrastructure, it must account for present and future risk to ensure that every dollar spent makes communities more resilient in the face of increasingly costly storms.

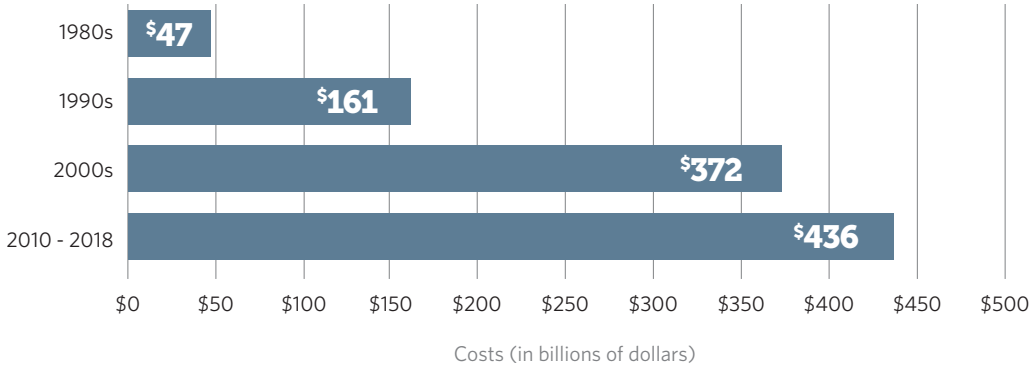
Existing policies fall short in protecting infrastructure

Since the late 1970s, federal agencies such as the Department of Housing and Urban Development, the Federal Emergency Management Agency (FEMA), and the Department of Transportation have been directed to consider and mitigate the flood risks associated with federally funded projects in flood-prone areas.

Losses and associated costs, however, have grown over the years. Costs from flood-related events have risen each decade since the 1980s, when the National Oceanic and Atmospheric Administration began tracking billion-dollar major disaster events. Since 2000, the federal government has given states tens of billions of dollars to help rebuild public infrastructure after major flooding disasters.[5]

The escalating damage—and costly cycle of repairing it—reflects a federal policy that, while well-intended, has not accounted for growing threats, such as sea level rise and increased flooding. Investments made today could be washed away in a matter of years or federal resources could be used to rebuild the same asset multiple times. As of 2016, the Office of Management and Budget estimated that at least 18,000 federally owned assets were in the 100-year flood plain, representing $83 billion in replacement costs.[6]

Costs From Flood-Related Disasters Have Risen Almost Tenfold in Four Decades



Source: National Oceanic and Atmospheric Administration, "U.S. Billion-Dollar Weather and Climate Disasters: Overview," accessed on March 28, 2019, https://www.ncdc.noaa.gov/billions

Flood-damaged infrastructure causes ripple effects

The resilience of the nation's infrastructure affects most aspects of business operations, including supply chain stability and workforce availability. Every day, businesses of all sizes rely on public infrastructure to keep their doors open and lights on. FEMA research shows that 40 to 60 percent of small businesses never reopen after a disaster, and 90 percent of those that take more than five days to reopen fail within one year.[7] When federal investments do not adequately account for flood risk, businesses face greater uncertainty about how reliable infrastructure will be during and after disasters; that uncertainty can hinder local economies.

Flooding also threatens national security. Over the past 30 years, 930 military sites across 48 states have reported being affected by floods.[8] Recognizing the importance of readiness, Congress in 2018 directed the Department of Defense to incorporate future flood risk into infrastructure investments on all military bases. This policy ensures that new construction and modifications will be better prepared for risk throughout the design life of projects.

Associated Press

Flood-ready investments are cost-effective

In its most recent report, "Natural Hazard Mitigation Saves," the National Institute of Building Sciences (NIBS) evaluated 10 federally funded infrastructure investments designed to reduce flood risk. Eight of the projects demonstrated positive cost-benefit ratios.

The highest return on investment came from upgrades made to water and wastewater treatment plants in Greenville, North Carolina. That effort was funded in 2001 by a $4.8 million grant from the Commerce Department's Economic Development Administration for constructing a berm and pumping station for Greenville's water treatment plant and increasing the height of a flood protection wall along with a retaining wall at the Northside Wastewater Treatment Plant. These improvements were designed to increase the plant's ability to withstand 100- and 500-year floods. With the facilities together valued at $514 million and the potential costs to Greenville from flood-related loss of service and environmental issues, NIBS determined that the project will save $31 for every $1 invested.

Flood safeguards have bipartisan support

A poll by The Pew Charitable Trusts released in March 2019 found that 77 percent of respondents, across party lines, support requiring that all federally funded infrastructure in flood-prone areas be constructed to better withstand the impacts of future floods.[9]

Both the need and support for such measures are clear. Congress must require that infrastructure investments consider future flood risks. Stronger flood safeguards across the federal government will limit damage, reduce the need to rebuild after floods, and potentially save taxpayers billions of dollars in the face of increasing costly storms.

Endnotes

1 Federal Emergency Management Agency, "OpenFEMA Dataset: Disaster Declarations Summaries -V1," accessed Jan. 22, 2019, https://www.fema.gov/openfema-dataset-disaster-declarations-summaries-v1.

2 National Oceanic and Atmospheric Administration, "Billion-Dollar Weather and Climate Disasters: Summary Stats," accessed on Feb. 5, 2019, https://www.ncdc.noaa.gov/billions/summary-stats (considering tropical cyclone to be flood-related disasters).

3 National Oceanic and Atmospheric Administration, "Billion-Dollar Weather and Climate Disasters: Table of Events," https://www.ncdc.noaa.gov/billions/events/US/1980-2018.

4 American Society of Civil Engineers, "America's Infrastructure Scores a D+" (2017), https://www.infrastructurereportcard.org.

5 Federal Emergency Management Agency, "OpenFEMA Dataset: Public Assistance Funded Projects Details – V1," accessed Feb. 1, 2019, https://www.fema.gov/openfema-dataset-public-assistance-funded-projects-details-v1.

6 Office of Management and Budget, "Climate Change: The Fiscal Risks Facing the Federal Government" (2016), https://obamawhitehouse.archives.gov/sites/default/files/omb/reports/omb_climate_change_fiscal_risk_report.pdf.

7 Federal Emergency Management Agency, "Make Your Business Resilient" (2016), https://www.fema.gov/media-library-data/1441212988001-1aa7fa978c5f999ed088dcaa815cb8cd/3a_BusinessInfographic-1.pdf.

8 Department of Defense, "Climate-Related Risk to DoD Infrastructure Initial Vulnerability Assessment Survey (SVLAS) Report" (2018), https://climateandsecurity.files.wordpress.com/2018/01/tab-b-slvas-report-1-24-2018.pdf.

9 The Pew Charitable Trusts, "77% of Americans Say Federally Funded Infrastructure Must Be Flood Ready" (2019), https://www.pewtrusts.org/en/research-and-analysis/articles/2019/03/13/77-percent-of-americans-say-federally-funded-infrastructure-must-be-flood-ready.

For further information, please visit:

pewtrusts.org/flood-prepared-communities

Contact: Laura Lightbody, project director
Email: llightbody@pewtrusts.org
Project website: pewtrusts.org/flood-prepared-communities